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MC2

USER'S GUIDE

LINK
Technologies, Inc.

MC2 User's Guide

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Warranty

Installation

1 Connect AC power cord and plug into grounded AC outlet.

2 With power off, connect keyboard.

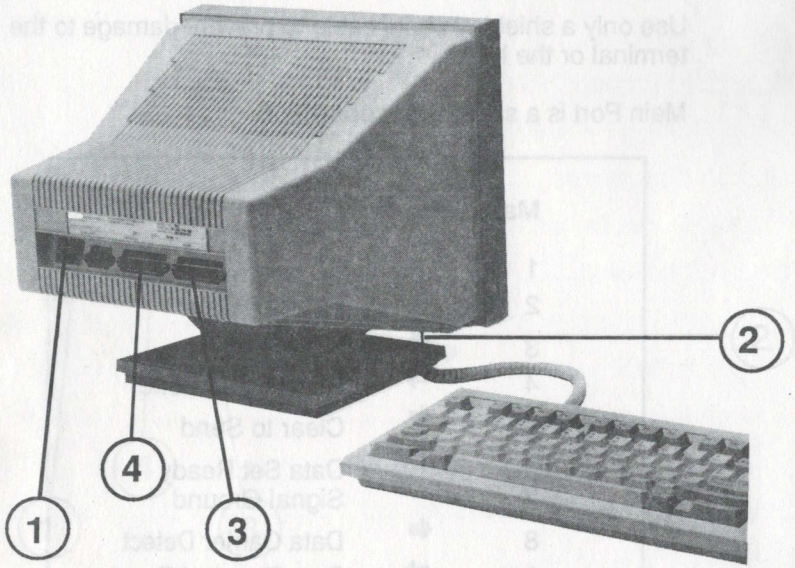
3 Connect communication cable for host computer to Main port.

Use only a shielded serial cable to prevent damage to the terminal or the host.

Main Port is a serial DTE connection.

Main Port Pinouts

1		Chassis Ground
2	→	Transmit Data
3	←	Receive Data
4	→	Request to Send
5	←	Clear to Send
6	←	Data Set Ready
7		Signal Ground
8	←	Data Carrier Detect
20	→	Data Terminal Ready
		Terminal In/Out


1
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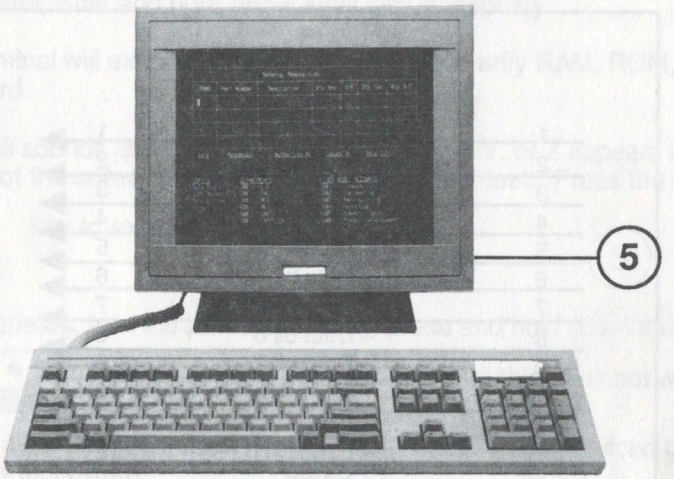

5

4 If you are installing a printer, connect the parallel printer cable to the Aux 1 port.

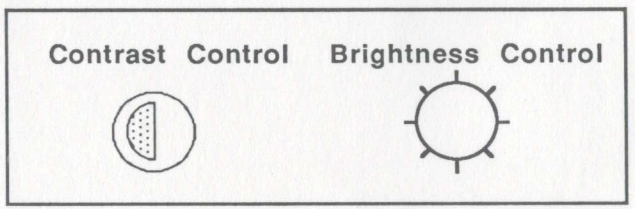
⚠ **WARNING** Do not plug the computer cable of any serial device into the Aux 1 port, or the printer cable into the MAIN port— doing so may permanently damage the equipment.

Parallel Port Pinouts

1	- Strobe	1
2	+ Data bit 0	2
3	+ Data bit 1	3
4	+ Data bit 2	4
5	+ Data bit 3	5
6	+ Data bit 4	6
7	+ Data bit 5	7
8	+ Data bit 6	8
9	+ Data bit 7	9
10	- Acknowledge	10
11	+ Busy	11
12	+ Paper end	12
13	+ Select	13
15	- Error	32
17	- Select input	36
18-25	Ground 16, 17, 19-30, 33	

5 Press the power switch to turn on the terminal. The power switch is labeled with international symbols for On "|" and Off "O".

Listen for a beep (usually within one second). This and the switch in the "|" position indicate the terminal is on.



Reset the terminal by pressing the Control, the Shift, and the Select keys simultaneously.

To toggle the status line on and off press the Control, Shift and right arrow keys simultaneously.

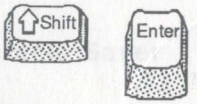
The terminal will execute a self-test program to verify RAM, ROM, and keyboard.

If the bell sounds and an A, a, b, C, c, d, E, W, X, Y, or Z appears at the bottom of the screen, you'll need to exit the self-test. Press the select

key to exit the self-test.

If a K appears, turn the power off. Then press and hold down the letter G key

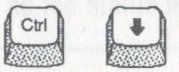
while you turn the power back on. If this does not work, contact a service technician—the terminal needs to be serviced by a qualified technician.



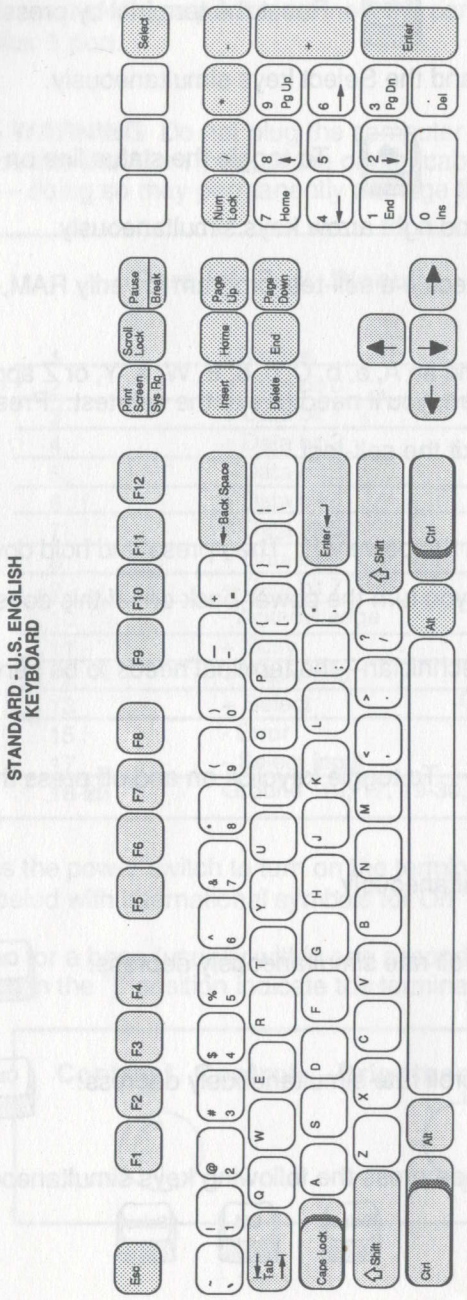
To toggle keyclick on and off press the Shift and the enter key simultaneously.

To increase the scroll rate simultaneously depress:

To decrease the scroll rate simultaneously depress:



To enter Setup Mode press the following keys simultaneously:



Display Setup Screen

Scroll Speed Sets the display scroll rate to Jump (the rate data is received), Smooth-8 (8 lines per second), Smooth-4, Smooth-2, Smooth-1

Display Sets the screen display to normal (light characters on a dark background), or reverse (dark characters on a light background).

Cursor Sets the cursor display to Off, Blink Block, Steady Block, Blink Line, or Steady Line.

Auto Scroll When set to *On*, causes the data to scroll up a line when the cursor moves past the last line of the page.

Function Key Line Allows the display of the 26th line on the screen. Permits either a programmable user message line or displays programmable function key labels.

Screen Saver Prolongs the life of the phosphor by blanking the screen when the terminal receives no data for approximately 15 minutes (no data is lost). Press any key to restore the screen.

Auto Newline When On, moves the cursor to the start of the next line when additional characters are entered at the end of the line.

Status Line Sets the top line of the screen as the status line.

Caps Lock	Print Mode	Communications Mode	User Programmable Message

General Setup Screen

Emulation Sets the terminal's operating mode to MC2, TeleVideo TVI905, TVI910+, TVI925, or ADDS A2.

WPRT Intensity Write Protect Intensity sets the write-protected characters to appear Dim, Normal, or Blank.

Blk End Causes the terminal to send a block of data to the computer with a line terminator as an ASCII US character and block terminator as an ASCII CR character (US/CR), or with line terminators as ASCII CR and LF characters and the block terminator as an ASCII ETX character (CRLF/ETX).

WPRT Rev Sets the write-protected characters to appear in reverse (dark characters on a light background).

Bell Volume Sets the bell volume to Off, Low (1), Medium (2), or Loud (3).

WPRT Undrln Sets the write-protected characters to appear underlined.

Keyboard Setup Screen

Keyclick Sets the audible keyclick to on or off.

Language Sets the keyboard to US or UK. With the International version of the MC2, this option sets the keyboard to US, UK, Dutch, French, German, Italian, Norwegian/Danish, Spanish, Swedish/Finnish, Swiss (French), or Swiss (German).

Repeat Causes the keys to repeat when they are held down for more than half a second.

Break Terminal sends a break signal to the main port for 200 milliseconds, 400 ms, or 600 ms.

Enter Causes the Enter key to send the ASCII character for Carriage Return (CR), or Carriage Return and Linefeed (CR/LF).

Communications Setup Screen

Baud Rate — Sets the main port baud rate to 134.5, 150, 300, 600, 1200, 2400, 3600, 4800, 7200, 9600, or 19200.

Rcv Handshake — Allows the terminal to control the receipt of data from a device connected to the Main port with no handshaking (None), XON/XOFF Handshaking, DTR Handshaking, or BOTH Handshaking (DTR/XOFF).

Xmt Limit — Causes the terminal to send data through the MAIN port as fast as the baud rate allows (None) or at a maximum rate of 60 cps or 150 cps.

Data/Parity — Causes the terminal to send and receive 8-bit data with no parity (8/None) or 7-bit data with odd (7/Odd), even (7/Even), space (7/Space), or mark (7/Mark) parity.

Xmt Handshake — Causes the terminal, when sending data to a device connected to the MAIN port, to ignore all incoming software handshaking signals (None) or respond to XON/XOFF handshaking.

Stop Bits — Selects either 1 or 2 stop bits.

Comm — Sets the terminal communication mode to full duplex (FDX), block (BLK), half duplex (HDX), or half-duplex block (HBLK).

Function Key Setup Screen

You can redefine the 12 function keys and four arrow keys to send a unique character string of up to 64 characters. Direction determines where the key data is sent:

FDX — Full Duplex sends data to the computer (1)

LOCAL — Sends data to the screen (2)

HDX — Half Duplex sends data to the computer and to the screen (3)

PRINTER — Sends data to the printer only (4)

FDX/PRINTER — Full Duplex/Printer sends data to the printer and computer only (5)

LOCAL/PRINTER — Sends data to the printer and the screen (6)

HDX/PRINTER — Half Duplex/Printer sends data to the printer, the computer, and the screen.

FUNCTION	MC2	ADDS VP A2	TVI 925	TVI 910	TVI 905
Send Term I.D.	ESC sp	ESC sp ESC ENQ	ESC M	ESC M	ESC M
Write Protect Attribute	ESC !	ESC !			
Unlock Keyboard	ESC "	ESC 6	ESC "	ESC "	ESC 5
Lock Keyboard	ESC #	ESC 5	ESC #	ESC #	ESC #
Set Protect Mode	ESC &	ESC &	ESC &	ESC &	ESC &
Protect Mode Off	ESC '	ESC '	ESC '	ESC '	ESC '
Write Protect Off (STD)	ESC (		ESC (	ESC (	ESC (
Write Protect On (H.I.)	ESC)		ESC)	ESC)	ESC)
Clear All Nulls	ESC *		ESC *	ESC *	ESC *
Clear All Space	ESC +	ESC +		ESC +	ESC +
Clear All Protect Spaces	ESC ,	ESC ,	ESC ,	ESC ,	
Address Cursor *Page/Row/Column*	ESC -	ESC -	ESC -	ESC -	
Clear Unprotect Code	ESC .	ESC .			
Read Cursor *Page/Row/Column*	ESC /	ESC /	ESC /	ESC /	
Clear All Tabs	ESC 0		ESC 3	ESC 3	ESC 3
Set Tab	ESC 1		ESC 1	ESC 1	ESC 1
Clear Tab	ESC 2		ESC 2	ESC 2	ESC 2
Send Line Unprotect	ESC 4		ESC 4	ESC 4	ESC 4
Send Page Unprotect	ESC 5		ESC 5	ESC 5	ESC 5
Send Line All	ESC 6		ESC 6	ESC 6	ESC 6
Send Page All	ESC 7	ESC 7 ESC DC1	ESC 7	ESC 7	ESC 7
Write ETX	ESC 8	ESC 8			
Write STX	ESC 9	ESC 9			
Clear Unprotect Null	ESC :	ESC :	ESC :	ESC :	ESC :
Clear Unprotect Space	ESC ; ESC G	ESC ;	ESC ; ESC +	ESC ;	ESC ;
Address Row Column	ESC =	ESC Y	ESC =	ESC =	ESC =
Read Row Column	ESC ?	ESC ?	ESC ?	ESC ?	ESC ?
Print Unprot.	ESC @	ESC @ ESC X	ESC F2	ESC m2	
Set Message Attribute	ESC A	ESC A			
Set Block Mode	ESC B		ESC B	ESC B	ESC B
Set Conversation Mode	ESC C	ESC C	ESC C	ESC C	ESC C
Set Half Full	ESC D		ESC D	ESC D	
Insert Line	ESC E	ESC M	ESC E	ESC E	ESC E
Load Message Line	ESC F	ESC S			
Set Attributes	ESC G	ESC 0	ESC G	ESC G	ESC G
Set Graphics	ESC H	ESC H			
Back Tab	ESC I	ESC O ESC I	ESC I	ESC I	ESC I

FUNCTION	MC2	ADDS VP A2	TVI 925	TVI 910	TVI 905
Page Back	ESC J	ESC < ESC J	ESC J	ESC J	
Page Forward	ESC K	ESC >	ESC K	ESC K	
Print Unformatted	ESC L ESC p	ESC L ESC p	ESC L	ESC L	ESC L
Send Character	ESC M		ESC H	ESC H	ESC v
Set No Scroll	ESC N		ESC H	ESC H	ESC w
Reset No Scroll	ESC O				
Print All	ESC P	ESC P ESC x	ESC P	ESC P	ESC P
Insert Character	ESC Q	ESC Q	ESC Q	ESC Q	ESC Q
Delete Line	ESC R	ESC |	ESC R	ESC R	ESC R
Send Message Unprotect	ESC S	ESC S	ESC S	ESC S	
Erase Line Space	ESC T	ESC K	ESC T	ESC T	ESC T
Monitor Mode On	ESC U	ESC U	ESC U	ESC U	
Set Protect Column	ESC V				
Delete Character	ESC W	ESC W ESC E	ESC W	ESC W	ESC W
Monitor Mode Off	ESC X ESC u		ESC X ESC u	ESC X ESC u	ESC X ESC u
Erase Pages Spaces	ESC Y	ESC k	ESC Y	ESC Y	ESC Y
Activate Segment 0	ESC]	ESC]	ESC]	ESC }	
Set Screen Features **See Table 1**	ESC `n	ESC ~ n	ESC ~	ESC ~	
Address 80 Columns **See Table 12**	ESC a	ESC a ESC Y |	ESC ^	ESC ^	
Read 80 Columns	ESC b	ESC #	ESC DEL	ESC DEL	
Tab	ESC i		ESC i	ESC i	ESC i
Up Cursor with Scroll	ESC j		ESC j	ESC j	ESC j
Local Edit	ESC k		ESC k	ESC k	ESC k
Duplex Edit/Lower Case	ESC l		ESC l	ESC l	ESC l
Insert Mode On	ESC q	ESC F			
Insert Mode Off	ESC r	ESC f	ESC r	ESC r	
Send Message All	ESC s	ESC s	ESC s	ESC s	ESC s
Erase Line Null	ESC t		ESC t	ESC t	ESC t
Set Screen Format	ESC x	ESC "	ESC V	ESC !	
Erase Page Nulls	ESC y	ESC y	ESC y	ESC y	ESC y
Program Function Key Label Line **See Table 2**	ESC z	ESC z	ESC z	ESC :	ESC z

FUNCTION	MC2	ADDS VP A2	TVI 925	TVI 910	TVI 905
Home	ESC {	ESC {			
Activate Segment 1	ESC }	ESC }	ESC [	ESC {	
Key Click On	ESC >		ESC >	ESC >	ESC >
Key Click Off	ESC <		ESC <	ESC <	ESC <
Reverse Screen			ESC b	ESC b	ESC b
Normal Screen		ESC d	ESC d	ESC d	ESC d
Blank Screen		ESC D	ESC o	ESC o	ESC o
Extension Print On	^R		ESC n	ESC n	ESC n
Extension Print Off	^T		ESC @	ESC @	ESC @
Transparent Print	^X	ESC 3	ESC A	ESC A	ESC A
Transparent Print Off	^T	ESC 4	ESC `	ESC `	ESC `
Display User Line	ESC g	ESC b	ESC g	ESC g	ESC g
Disable User Line	ESC h	ESC B	ESC h	ESC h	ESC h
Select Termination Seq.	ESC 3		ESC ,	ESC ,	ESC x
Select Cursor Attribute *Ps* = **See Table 15**	ESC.*Ps*			ESC.*Ps*	ESC.*Ps*
Select Print Term Char.	ESC o		ESC p	ESC p	ESC p
Address Row	ESC m			ESC [	
Address Column	ESC n			ESC]	
Cursor On/Off			ESC . *Pn*	ESC . *Pn*	
Display Control Character		ESC Z		ESC F	
Set Write Protect Attribute		ESC 0			
Home Lower Left		ESC r			
Program Function Keys **See Table 7**	ESC |	ESC |	ESC |	ESC |	ESC |
Half Intensity On (Embedded)					ESC)
Half Intensity Off (Embedded)					ESC (
Load Function with Default	ESC _	ESC _	ESC _	ESC ~ 2	ESC _
Clear All Function Keys	ESC \	ESC \	ESC m	ESC \	ESC \
Graphic Mode Off		ESC 2	ESC %	ESC %	ESC %
Graphic Mode On		ESC 1	ESC $	ESC $	ESC $
Load 26th Line	ESC f	ESC $	ESC f	ESC f	ESC f
Bell	CTRL G	CTRL G	CTRL G	CTRL G	CTRL G
Backspace	CTRL H	CTRL H	CTRL H	CTRL H	CTRL H
Tab	CTRL I	CTRL I	CTRL I	CTRL I	CTRL I
Linefeed with Scroll	CTRL J	CTRL J	CTRL J	CTRL J	CTRL J
Up Cursor No Scroll	CTRL K	CTRL Z	CTRL K	CTRL K	CTRL K

FUNCTION	MC2	ADDS VP A2	TVI 925	TVI 910	TVI 905
Right Cursor	CTRL L	CTRL F	CTRL L	CTRL L	CTRL L
Return	CTRL M	CTRL M	CTRL M	CTRL M	CTRL M
Lock Keyboard	CTRL O	CTRL D			CTRL O
Unlock Keyboard	CTRL N	CTRL B			
Cursor Down No Scroll	CTRL V		CTRL V	CTRL V	CTRL V
Clear Unprotect Space	CTRL Z		CTRL Z	CTRL Z	CTRL Z
Escape Lead In	CTRL [	CTRL [	CTRL [	CTRL [	CTRL [
Home	CTRL ^	CTRL A	CTRL ^	CTRL ^	CTRL ^
New Line	CTRL _	CTRL _	CTRL _	CTRL _	CTRL _
Monitor Mode Enable	CTRL !/1 CTRL!/1	CTRL!/1	CTRL!/1	CTRL!/1	
Monitor Mode Disable	CTRL@/2	CTRL@/2	CTRL@/2	CTRL@/2	CTRL@/2
Enable Transparent	CTRL X			CTRL R	
Disable Transparent	CTRL T	CTRL T		CTRL T	
Set 8th Bit (WRPT Prot.)		CTRL N			
Reset 8th Bit (WRPT Prot.)		CTRL O			
Cursor Back		CTRL U			
Address Column		CTRL P			
Address Row		CTRL K			
Extension Print On	CTRL R	CTRL R			
Extension Print Off	CTRL T	CTRL T			
Clear Unprot. Field				CRTL X	
Down Arrow Key	CTRL J		CTRL V	CTRL J	CTRL J
Shift Down Arrow	CTRL V		CTRL J	CTRL V	CTRL V
Cursor On		CTRL X			
Cursor Off		CTRL W			
Clear All Spaces		CTRL L			

Screen Features

The MC2's screen features can be selected in set-up mode. These features can also be changed from the host or locally from the keyboard.

To change the feature from the host or keyboard Send:

ESC `*n*

where ***n*** = screen feature desired (See **Table 1**).

Note: When in the TeleVideo or ADDS Viewpoint emulation modes, send **ESC ~*n*** to set screen features.)

n	Screen Feature	*n*	Screen Feature
0	Cursor display off	6	Reverse protect character
1	Cursor display on	7	Half intensity, protect character
2	Steady block cursor	8	Screen display off
3	Blinking line cursor	9	Screen display on
4	Steady line cursor	K	Reverse video
5	Blinking block cursor	L	Normal video

Table 1

Addressing Function Key Label Line

It may be necessary to write data on the function key label line or program a user's message on the 26th display line. There are eight label fields in the 80 column mode. A user's message of 78 characters can be programmed on the 26th line when 80 columns are displayed.

To program the label fields, enter:

ESC z *p1 label* CR

where ***p1*** = the function key field code. See **Table 2.**

Function Key	Field Code *p1*	Function Key	Field Code *p1*	Function Key	Field Code *p1*
F1	0	F7	6	F12	;
F2	1	F8	7	F13	<
F3	2	F9	8	F14	=
F4	3	F10	9	F15	>
F5	4	F11	:	F16	?
F6	5				

Table 2

Display Attributes

One way to set attributes in the MC2 is to send,

ESC A p1 p2

where p1 = display field code and p2 = attribute code. These attributes are set in non-volatile memory and remain until changed or the F key is depressed while in set-up mode. See **Tables 3** and **4.**

Display Field	P1
Screen Display	0
Function Key Label Line	1
Local Message Field	2
Host Message Field	3

Table 3

Attribute	P2
Blank	1
Blink	2
Half Intensity	P
Normal	0
Reverse Video	4
Underline	8

Table 4

Setting Attributes

To set an attribute in all emulations except ADDS Viewpoint, place the cursor one character position prior to where the attribute is to begin. Each attribute, except the write protect attribute, occupies one character position.

To enter the appropriate escape sequence see **Table 5.**

Visual Attributes

The MC2 is capable of highlighting the data on the screen with the use of visual attributes. There are five attributes available, Blank, Blink, Half Intensity, Underline and Reverse Video. These attributes can also be used in various combinations (See **Table 5**).

Attributes	Escape Sequences
Normal (default) Video	ESC G 0
Blank	ESC G 1
Blink	ESC G 2
Blank blink	ESC G 3
Reverse video (default reverse)	ESC G 4
Blank / reverse	ESC G 5
Reverse and blink	ESC G 6
Blank / reverse and blink	ESC G 7
Underline	ESC G 8
Blink / underline	ESC G :
Reverse and underline	ESC G <
Blank / reverse and underline	ESC G =
Reverse and underline and blink	ESC G >
Blank reverse and underline and blink	ESC G ?
Half Intensity	ESC G p
Half Intensity and blank	ESC G q
Half Intensity and blink	ESC G r
Half Intensity and blank	ESC G s
Half Intensity and reverse	ESC G t
Half Intensity, reverse and blank	ESC G u
Half Intensity, reverse and blink	ESC G v
Half Intensity, reverse and blank	ESC G w
Half Intensity and underline	ESC G x
Half Intensity, underline and blank	ESC G y
Half Intensity, underline and blink	ESC G z
Half Intensity, underline, blink and blank	ESC G {
Half Intensity, underline and reverse	ESC G |
Half Intensity, underline, reverse and blank	ESC G }
Half Intensity, underline, reverse and blink	ESC G ~

Table 5

Setting Attributes in ADDS Viewpoint Emulation

As in the other MC2 emulation modes, visual attributes can be used for highlighting data in the ADDS Viewpoint mode of operation. The attributes are set differently, however. To set attributes in the ADDS Viewpoint emulation: position cursor at start of field to be highlighted and enter

CTRL N

Define the area to be highlighted and enter

CTRL O

Now select the attribute to be used and enter

ESC 0 *a*

where ***a*** = attribute code. (See **Table 6**, attribute selections.)

Video Attribute Chart

Attribute	Attribute Code
*Normal	@
*Half Intensity	A
Blinking	B
Half Intensity, Blinking	C
*Reverse Video	P
*Reverse Video, Half Intensity	Q

Attribute	Attribute Code
Reverse Video, Blinking	R
Reverse Video, Half Intensity, Blinking	S
Underlined	`
Underlined, Half Intensity	a
Underline, Blinking	b
Underline, Half Intensity, Blinking	c
Video Suppress	D

Table 6

Programming the Cursor and Function Keys

To program cursor (arrow) and function keys enter the following code in the exact sequence shown:

ESC | *p1 p2 message* ^ Y

P1 is the value number of the key to be programmed (see **Table 7**), ***p2*** is one of the following values:

1 — Send to the computer (full duplex in this mode it may not display on the screen)

2 — Send to the screen (local) Shift ESC

3 — Send to the computer and to the screen (half duplex)

4 — Send to printer only

5 — Send to printer and computer only

6 — Send to printer and screen only

7 — Send to printer, computer and screen

Enter the value you want for ***p2***. Now enter message. The MC2 has the capacity to store up to 64 characters in each function key. (A pool of 600 bytes of function key memory is available.) To end the message type **CTRL Y**.

Function Key	Key Value Code Unshifted	Shifted	Function	Key Value Code Unshifted	Shifted
F1	1	A	F11	;	K
F2	2	B	F12	<	L
F3	3	C	F13	=	M
F4	4	D	F14	>	N
F5	5	E	F15	?	O
F6	6	F	F16	@	P
F7	7	G	↑	-	)
F8	8	H	↓	.	*
F9	9	I	→	0	,
F10	:	J	←	/	+

Table 7

Following the above instruction will allow you to program the cursor and function keys in all terminal emulations. The terminal can also be programmed using the following sequence:

ESC z Key Value Code *Message* DEL

Function Key	Key Value Code Unshifted	Shifted	Function	Key Value Code Unshifted	Shifted
F1	@	`	F9	H	h
F2	A	a	F10	I	i
F3	B	b	F11	J	j
F4	C	c	F12	K	k
F5	D	d	F13	L	l
F6	E	e	F14	M	m
F7	F	f	F15	N	n
F8	G	g	F16	O	o

Table 8

User Line

The user line can be used as an extra line with which to enter data. Up to 48 characters of data can be displayed on the user line.

Note: Here is the procedure to load user line:

1. Press **ESC F** to start entering data.
2. Enter message (up to 48 characters).
3. Press **Return** to end programming mode (if entering less than 40 characters — otherwise cursor returns to original screen position).

Cursor and Function Keys Defaults

The cursor and function keys are pre-programmed at the factory with a default character sequence as listed in **Table 9.**

	Key	Unshifted Code	ADDS Viewpoint	Shifted Code	ADDS Viewpoint
	F1	SOH @ CR	STX 1 CR	SOH ` CR	STX ! CR
	F2	SOH A CR	STX 2 CR	SOH a CR	STX " CR
	F3	SOH B CR	STX 3 CR	SOH b CR	STX # CR
	F4	SOH C CR	STX 4 CR	SOH c CR	STX $ CR
	F5	SOH D CR	STX 5 CR	SOH d CR	STX % CR
	F6	SOH E CR	STX 6 CR	SOH e CR	STX & CR
	F7	SOH F CR	STX 7 CR	SOH f CR	STX ' CR
	F8	SOH G CR	STX 8 CR	SOH g CR	STX (CR
	F9	SOH H CR	STX 9 CR	SOH h CR	STX) CR
	F10	SOH I CR	STX : CR	SOH i CR	STX * CR
	F11	SOH J CR	STX ; CR	SOH j CR	STX + CR
	F12	SOH K CR	STX < CR	SOH k CR	STX , CR
*	F13	SOH L CR	STX = CR	SOH l CR	STX - CR
*	F14	SOH M CR	STX > CR	SOH m CR	STX . CR
*	F15	SOH N CR	STX ? CR	SOH n CR	STX / CR
*	F16	SOH O CR	STX @ CR	SOH o CR	STX 0 CR

Table 9

* Press **ALT F1** thru **F4** to access **F13 - F16**

Monitor Mode

When the MC2 is in monitor mode it displays control commands. It can be entered while in any of the communication modes (i.e., BLOCK, HALF or FULL DUPLEX).

To enter monitor mode via the computer, send

ESC U

To exit monitor mode (and end the display of control commands) press either
ESC X or **ESC u**
(**Table 10** lists the displayable control characters.)

Monitor Mode Control Characters

Code	ASCII	Character Hex	Character Displayed	Code	ASCII	Character Hex	Character Displayed
CTRL @	NULL	00	NL	CTRL P	DLE	10	DL
CTRL A	SOH	01	SH	CTRL Q	DC1	11	D1
CTRL B	STX	02	SX	CTRL R	DC2	12	D2
CTRL C	ETX	03	EX	CTRL S	DC3	13	D3
CTRL D	EOT	04	ET	CTRL T	DC4	14	D4
CTRL E	ENQ	05	EQ	CTRL U	NAK	15	NK
CTRL F	ACK	06	AK	CTRL V	SYN	16	SY
CTRL G	BL	07	BL	CTRL W	ETB	17	EB
CTRL H	BS	08	BS	CTRL X	CAN	18	CN
CTRL I	HT	09	HT	CTRL Y	EM	19	EM
CTRL J	LF	OA	LF	CTRL Z	SUB	1A	SB
CTRL K	VT	OB	VT	CTRL [	ESC	1B	EC
CTRL L	FF	OC	FF	CTRL /	FS	1C	FS
CTRL M	CR	0D	CR	CTRL]	GS	1D	GS
CTRL N	SO	0E	SO	CTRL ^	RS	1E	RS
CTRL O	SI	0F	SI	CTRL _	US	1F	US

Table 10

Graphics Mode

The MC2 has 32 graphics characters for graphs, charts and other line drawing figures. These characters are (**Table 11**) displayed when the graphics mode is enabled and the corresponding key is pressed. To enable graphics, send ESC H CTRL B. To disable the graphics mode send ESC H CTRL C. (For MC2 and ADDS emulations) For TVI emulation, enable graphics, send ESC $ and disable, send ESC %.

Graphics Characters

Graphic Character	MC2 Native	ADDS	TVI	Graphic Character	MC2 Native	ADDS	TVI
┬	0	P	N	space	space	space	space
└	1	H	E	↑	A	<	Q
┌	2	@	F	→	B	8	R
┐	3	D	G	←	C	4	S
├	4	X	M	↓	D	0	T
┘	5	L	H	1/2	E		U
│	6	d	J	1/4	F		V
▒	7	I	P	π	G		W
┼	8	h	I	±	H		X
┤	9	T	L	≥	I		Y
─	:	'	K	≤	J		Z
▒	;		]	÷	K		[
═	<		\	┘	L		A
┴	=	\	o	┌	M		B
‖	>		^	┐	N		C
▒	?		-	┘	O		D

Table 11

Cursor Addressing

Table 12 displays the Cursor addressing coordinates for the MC2.

Cursor Address Coordinates

Row/ Col.	ASCII Code	Row/ Col.	ASCII Code	Row/ Col.	ASCII Code
1	Space	33	@	65	,
2	!	34	A	66	a
3	"	35	B	67	b
4	#	36	C	68	c
5	$	37	D	69	d
6	%	38	E	70	e
7	&	39	F	71	f
8	'	40	G	72	g
9	(	41	H	73	h
10	)	42	I	74	i
11	*	43	J	75	j
12	+	44	K	76	k
13	,	45	L	77	l
14	-	46	M	78	m
15	.	47	N	79	n
16	/	48	O	80	o
17	0	49	P	81	p
18	1	50	Q	82	q
19	2	51	R	83	r
20	3	52	S	84	s
21	4	53	T	85	t
22	5	54	U	86	u
23	6	55	V	87	v
24	7	56	W	88	w
25	8	57	X	89	x
26	9	58	Y	90	y
27	:	59	Z	91	z
28	;	60	[	92	{
29	<	61	/	93	|
30	=	62	]	94	}
31	>	63	^	95	~
32	?	64	-	96	DEL/RUB

Table 12

ADDS Viewpoint Vertical and Horizontal Cursor Addressing

Vertical Address: First depress **CTRL K** and then the character representing row 1 - 24. Horizontal Address: First depress **CTRL P** and then the character representing columns 1 - 80.

Column	Code	Column	Code	Column	Code
1	^@	33	2	65	d
2	^A	34	3	66	e
3	^B	35	4	67	f
4	^C	36	5	68	g
5	^D	37	6	69	h
6	^E	38	7	70	i
7	^F	39	8	71	p
8	^G	40	9	72	q
9	^H	41	@	73	r
10	^I	42	A	74	s
11	^P	43	B	75	t
12	^Q	44	C	76	u
13	^R	45	D	77	v
14	^S	46	E	78	w
15	^T	47	F	79	x
16	^U	48	G	80	y
17	^V	49	H		z
18	^W	50	I		
19	^X	51	P		
20	^Y	52	Q		
21	SP	53	R		
22	!	54	S		
23	"	55	T		
24	#	56	U		
25	$	57	V		
26	%	58	W		
27	&	59	X		
28	'	60	Y		
29	(	61	\		
30	)	62	a		
31	0	63	b		
32	1	64	c		

Table 13

Row	Code	Row	Code
1	@	13	L
2	A	14	M
3	B	15	N
4	C	16	O
5	D	17	P
6	E	18	Q
7	F	19	R
8	G	20	S
9	H	21	T
10	I	22	U
11	J	23	V
12	K	24	W

Table 14

Horizontal Split Screen

The terminal has the ability to horizontally divide the display area. To do so send **ESC x 1** ***p1***, where ***p1*** = row code in the table below. This code corresponds to the row number in which the lower text segment begins.

Row	Row Code	Row	Row Code	Row	Row Code
1	(space)	9	(	17	0
2	!	10	)	18	1
3	"	11	*	19	2
4	#	12	+	20	3
5	$	13	,	21	4
6	%	14	-	22	5
7	&	15	.	23	6
8	'	16	/	24	7

Protect Mode

The protect mode allows certain areas of data to be protected from accidental erasure or change.

Fields input under the write protect mode appear on the screen with the write protect attribute. The cursor cannot enter into any of these areas, but instead passes over them when the space bar or the right or left arrow is pressed. If the whole screen is protected, the cursor will go to the home position on the screen, and will not move. Normal screen scrolling functions will not work while the screen is in the protect mode.
Write protected data:

1. Position cursor where you want the first protected character to be.

2. Press ESC). This enables write protect mode. Until it is reset, each character entered will be displayed with the write protect attribute. The status line will display WRPROT.
3. Enter data to be protected in that part of the screen.
4. Proof-read and correct if necessary.
5. When completed, press ESC (to disable write Protect Mode.

When all areas to be protected have been finished, enter **ESC &**. This turns on the Protect Mode for the entire screen and is necessary in order to protect your data. Look for **PROT** on the status line (this indicates that the Protect Mode is on). To turn Protect Mode off press **ESC '**. All half-intensity, graphics and attribute characters on the screen are protected from erasure when the Protect Mode is on.

Print Function Programming

The terminal's printer port may be set for one of five types of data transfer between the computer, the terminal and the printer. To initiate print functions from the keyboard,

- pressing the Print key will print the screen,
- pressing Shift/Control/Print will toggle extension print on and off.

Formatted Page Print — *MC2 Native, TVI905/910/925, and ADDS Viewpoint/ A2 emulations:*
In this mode all data between the home position and the cursor position is sent to the printer. Each line is terminated with a CR, LF and Null. To initiate Formatted Page Print, press the Print key or send **ESC P.**

Unformatted Page Print — *MC2 Native, TVI905/910/925, and ADDS Viewpoint/ A2 emulations:*
In this mode all data between the home position and the cursor position is sent to the printer. No line delimiters are sent. To initiate Unformatted Page Print, send **ESC L** or **ESC p.**

Extension or Bidirectional Print — *MC2 Native, TVI905/910/925, and ADDS Viewpoint/ A2 emulations:*
In this mode all data received by the terminal is displayed and sent to the printer. When this is turned off, any data remaining in the print buffer still goes to the printer. To initiate Extension or Bidirectional Print, press **CTRL R** to enable and **CTRL T** to disable.

TVI 910/925 emulation: To enable Extension Print, send **ESC @** and to disable Extension Print send **ESC A.**

Transparent Print

MC2 Native, TVI905/910/925, and ADDS Viewpoint/ A2 emulations:
In this mode, all data goes through the terminal to the printer without reaching the screen. When this is turned off, data received goes to the screen. To turn on Transparent Print, press **CTRL X**. To turn off Transparent Print, press **CTRL T**.

TVI 910/925 emulations: To enable Transparent Print, send **ESC `**. To disable Trans-parent Print, send **Esc a**.

Print Unprotected

MC2 Native, TVI905/910/925, and ADDS Viewpoint/ A2 emulations:
Sending **ESC @** will cause all unprotected data between the home position and the cursor to be sent to the printer. Each line will be terminated with a CR and LF and protected data will be sent as spaces.

TVI 910 emulation: Sending **ESC m** will print unprotected.

TVI 925 emulation: Sending **ESC F** will print unprotected.

Local or Duplex Edit Key Functions

Function	ESC Code (not ADDS)	Keys
Send Page All	7	Shift / Print Screen
Backtab	I	Shift / Tab
Insert Mode On	q	Insert
Delete Character	W	Delete
Delete Line	R	Shift / Delete
Insert Mode Off	r	Shift / Insert
Erase Line Spaces	T	End
Erase Page Spaces	Y	Shift / End
Home Cursor	{	Shift / Home
Page Forward	K	Page Down / Shift Page Up
Page Back	J	Page Up / Shift / Page Down
Print Page Formatted	P	Print Screen
Home Cursor	CTRL^	Home
Keyclick		Shift / Enter
Status Line		Control / Shift / Right Arrow
Increase Scroll Rate		Control / Up Arrow
Decrease Scroll Rate		Control / Down Arrow

Keyboard Commands — Arrow and Function Keys

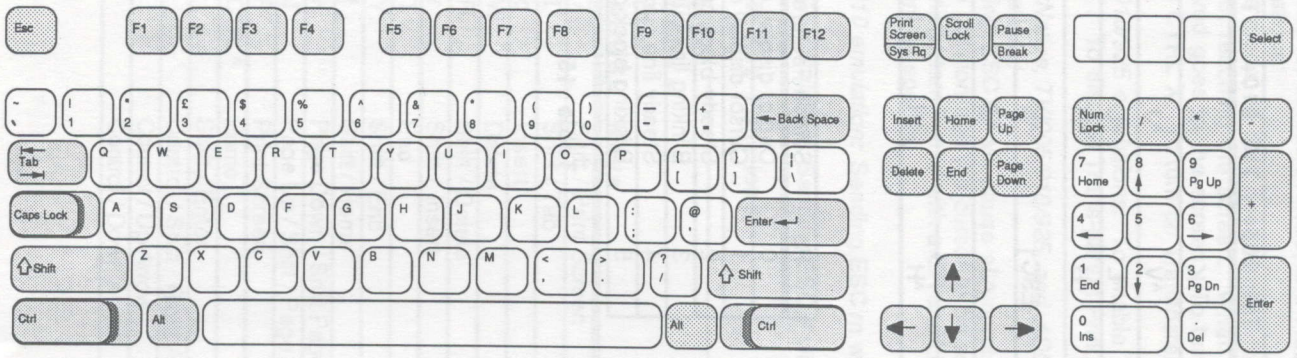
Function	MC2	TVI 905	TVI 910+	TVI 925	ADDS A2
↑	^K	^K	^K	^K	^Z
↓	^J	^V	^J	^V	^J
→	^L	^L	^L	^L	^F
←	^H	^H	^H	^H	^U
Shift ↑	^K	ESC j	^K	ESC j	^Z
Shift ↓	^J	^J	^J	^J	^J
Shift →	^L	^L	^L	^L	^F
Shift ←	^H	^H	^H	^H	^U

Screen Features

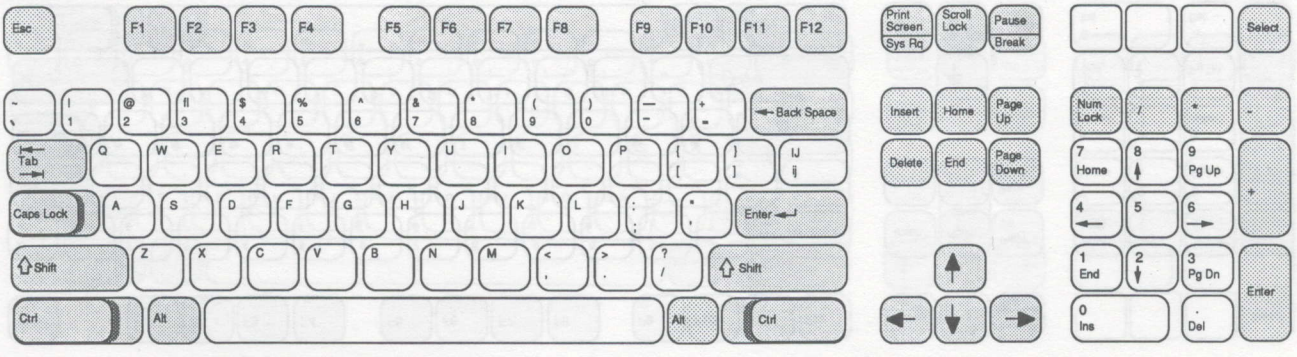
Ps	Screen Feature
0	Cursor display off
1	Cursor display on
2	Steady block cursor
3	Blinking line cursor
4	Steady line cursor
5	Blinking block cursor

Table 15

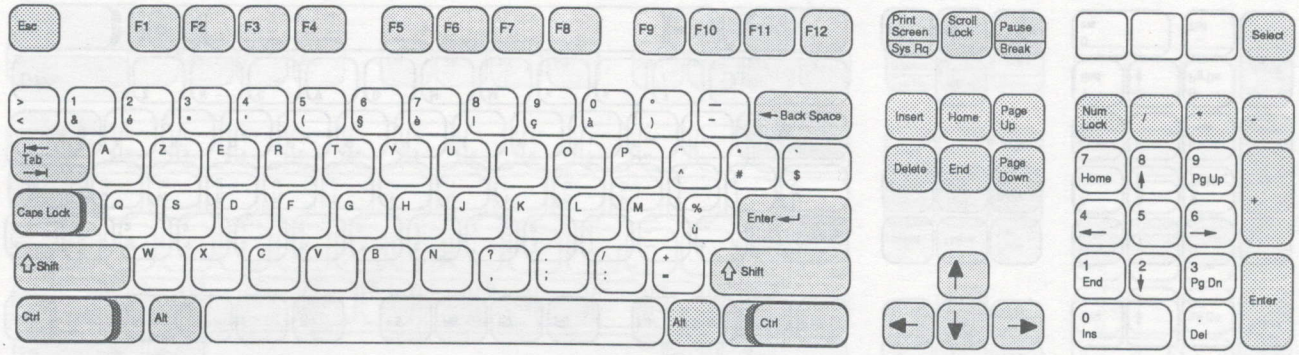
U.K. ENGLISH KEYBOARD



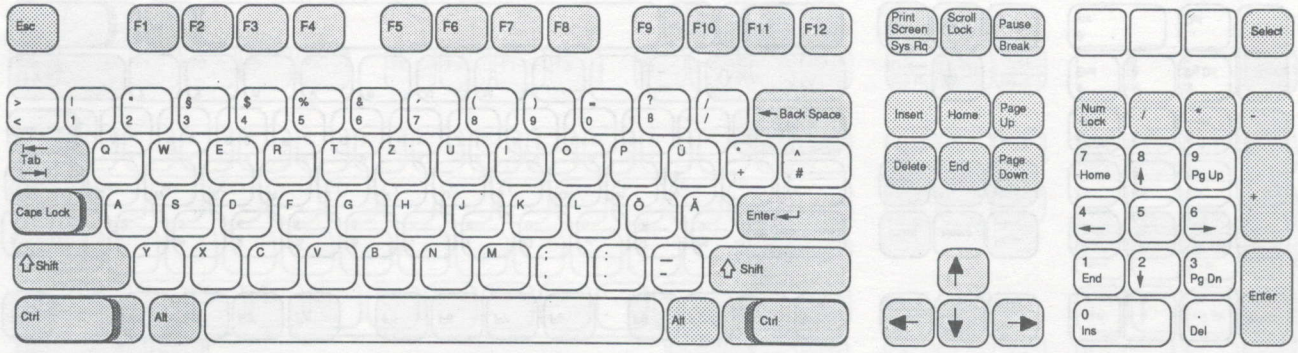
DUTCH KEYBOARD



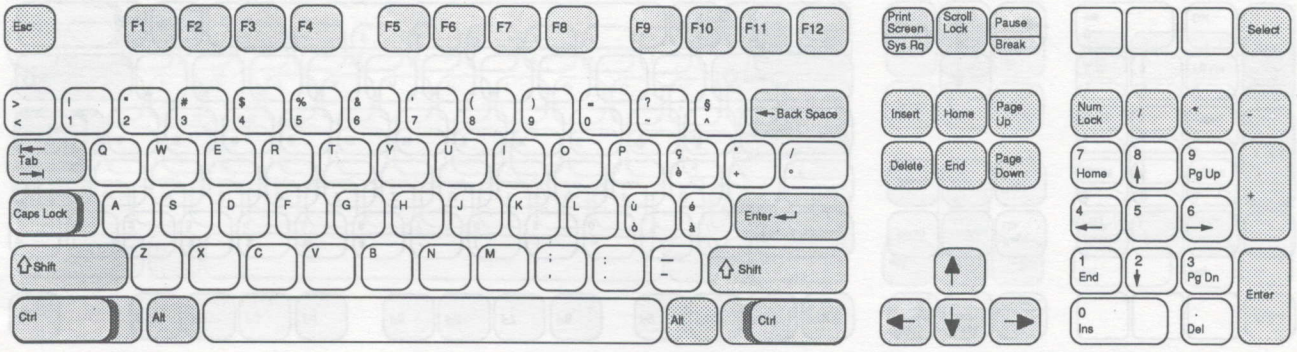
FRENCH KEYBOARD



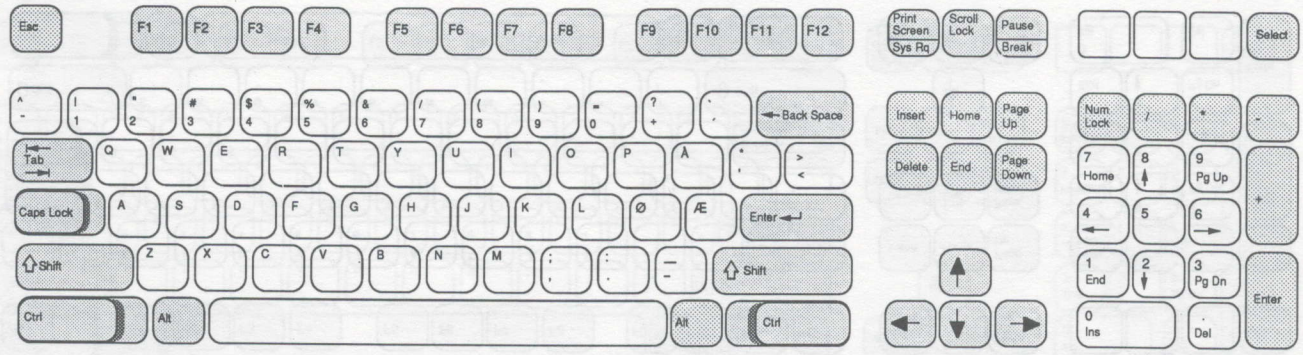
GERMAN KEYBOARD



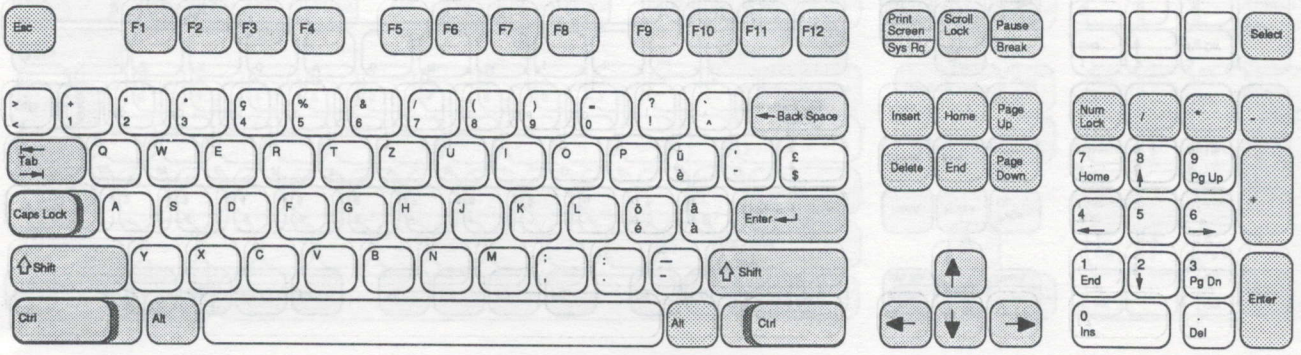
ITALIAN KEYBOARD



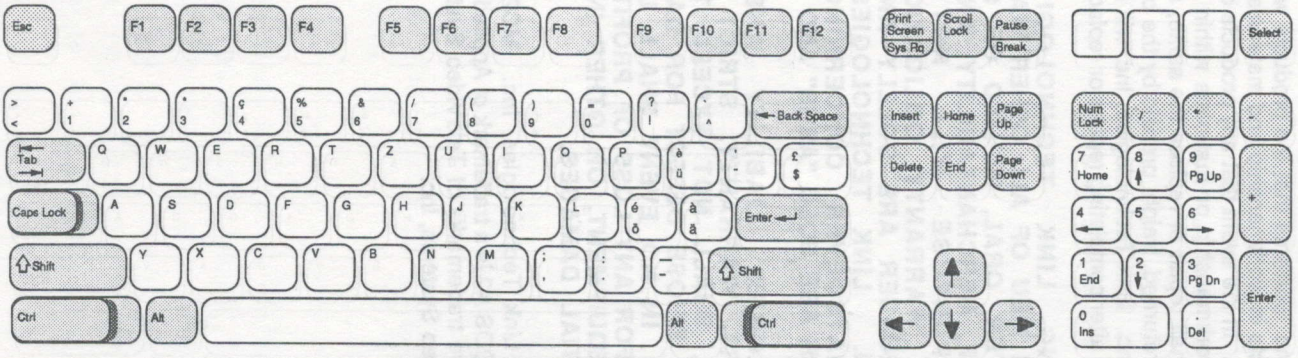
NORWEGIAN/ DANISH KEYBOARD



SWISS (French)



SWISS (German)



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